Lou: We are here to talk about sensemaking today because, honestly, there is no issue that gets more meta than sensemaking, since whatever solutions to our existential issues we may find, if we don’t have a good system to shelter them, share them, draw the right conclusions, and act on them, we will still run ourselves over the cliff of our illusions.

And so the COVID crisis, as we witnessed in our community, has been bringing both a lot of opportunities and challenges to our sensemaking system. The COVID-19 crisis, and I’m going to summarize them, because Allison has made the heroic effort of creating a report from three months of daily discussions we had at the core of the crisis. And there is a whole sensemaking section that I encourage you to read. Perhaps, Allison, you can put the link to the report.

Anyway, so, the COVID-19, nothing new there, but only revealed and emphasized the brokenness of our sensemaking system, both within our institutions, and our information ecosystem. I’m sure examples that we brought up in this community is the fact that our brain is maladapted to understand the world really intuitively. Our COVID-19 responses showed our inability to think in term of exponential trends, for instance.

We’ve seen that our system for sharing information is sometime all backward. Like people in power are not only ill-incentivized, but they also lack access to good information. Meanwhile, those with the right information lack access to resources to make themselves heard. We’ve talked about the fact that communication is a time-sensitive coordination game, by which different people have access to different information. Different updates, at different speeds, and according to different goals.

This whole situation being further complicated by a general lack of trust, the existence of competing narratives, this is all making things indeed more difficult.

And we had a Salon with Kim Osborne, which I’m going to share the link of right here, where she brilliantly explained the importance of effective communication across different stakeholders, and how to translate and manage expectations. So that was one of those conversations we already had.

On the other hand, there exist challenges within the public information ecosystem. First and foremost, of course, is polarization that is accentuated by social media, having the serious potential to slow down the global COVID-19 response. One striking example being the rise of the anti-vaxxers through social media, through YouTube, that would effectively make a potential COVID vaccine completely ineffective, in all logic (sp?).

There’s another thing, which is our current information sources are shifting, while the mainstream information system, the new system, is degenerating. We witnessed the rise of the reign of podcasts, for instance, and new sensemaking communities just like ours, for instance.

It is a shifting landscape. And as our potential challenge lies (sp?) difficulty is increasing potential for violence and apathy. And we’ve seen our current information distribution platforms, Facebook, YouTube sometime, aggravating the sensemaking landscape, by contributing to the propagation of confusion by misinformation or sometime provoking violence.

This is not all doom and gloom, though. As in any crisis, there are many opportunities to build a system that’s driven by truth, by foresight, by evidence, in particular, from the point of view of improving our institutional setting, because now we have seen our weaknesses, so it’s a great time to fix them.

It’s a great time to influence some of the organizations that have been set up in response to the pandemic to have a broader scope than just preparing for the next pandemic. And it’s a good time to build resiliency for a variety of future risk.

We have also talked a lot in this community about encouraging quantitative policies, encouraging the use of prediction tools and data for improving decision makers ability to respond. In particular, we talked a lot about a tool called Metaculus, and I’m here pasting in the chat the link to a great Salon we had with Anthony Aguirre, presenting Metaculus and this forecasting/prediction tool.

The other opportunity from this crisis is to build a truth-driven information ecosystem. The Internet is not just giving birth to a rise in conspiracy theories. Things like social media, email, Zoom are major coordination technologies that are being strengthened as a global immune system, while people stay at home and learn to use this new muscle, and I think just this community is very much a positive example of this.

Especially since, meanwhile, improving the default ecosystem means, precisely, empowering the public, the users, to understand how to navigate the information space and affect checking information sources.

So, we’ve talked in this community of how to build better alternatives to the current broken system. And we mentioned how this means not only sharing information, in a reliable manner, but also sharing the underlying epistemic processes of these systems.

We had a Salon that was presenting two super promising projects in this spirits that are useful to help the public map the information space better. So these projects were Ingenuity, the Ingenuity Project, and the COVID-19 Argument Chains created by the Society Library and I pasted the link in the chat.

So, this brings me to the last point that we uncovered in this community, which is that we need to shift from reductionist silos to systemic cross-collaboration. And I would say also systematic. :-) Because not doing so is precisely what is leaving us blind for the ripple effects of crisis. So what we need is to establish links between the silos of institutions, scientists, politics, and to set up an infrastructure for cross-disciplinary sensemaking, in which different stakeholders can appreciate the larger context of their work, and the role of other actors. That’s more or less where we left the conversation in this community, and I’m really glad our two speakers are here today to continue to explore the need for cross-silo collaboration in our post-COVID world.

Phoebe, is Phoebe here?

Phoebe: Yes.

Lou: Yes. Great. Phoebe, so you are complex systems thinker, and you work for this on developing decision-making methodologies and governance for our increasingly complex world. You’ve been a leading figure during the COVID epidemics, and you put a lot of efforts into making sense of it, publishing very important blog posts. You’ve graced us by your presence in our Salon already, and I’m very grateful you came back.

Dave, it’s an honor to meet you. You’re joining this community for the first time. You are known for having developed the Cynefin Framework, and correct me if I’m pronouncing it wrong, it’s really a sensemaking device. [Phoebe, Dave: “kuh NEF in”, “kuh nev in”] created in 1999. So you’ve been working on this issue for a while now. And you’re also the founder of Cognitive Edge, which is a consulting firm specializing in complexity and sensemaking.

Thank you so, so much for joining us today. I would love to hear both of your thoughts on, I guess also, looking back on this crisis, what were the main learnings in terms of sensemaking, before we dive into cross-silo collaboration.

Phoebe: Dave, do you want to kickoff because it’s your first time? So you go first.

I get set up without a precedent (sp?). :-) The origins of what I’m going to talk about: DARPA programs, run over 15 years ago, looking at how do you measure the dispositional state of a civilian population, to identify when it’s likely to support terrorism. That’s called weak signal detection. In intelligence terms, it’s also called human terrain mapping. I’m not wild about that phrase. And what we’ve been doing is to combine a mixture of things, so complexity theory, cognitive neuroscience, and the biological end of anthropology, with some interesting aspects from the humanities, like assemblage theory.

So I’ll just run through some of the main conclusions. And currently just finishing off the European Union Handbook on Crisis Management, which is a joint collaboration between my Cynefin Centre and the European Union, which will be published next month, where a lot of this stuff is going to be contained. So that’s kind of like the wider background.

So let me make a couple of controversial statements up front. There is a general myth, particularly amongst people in my own social class and educational background. And looking around, that’s everybody else on the screen in front of me. To assume that if only people had the right information and the right education and talk with us enough, they would make the right decisions. And that is a quite dangerous myth. You see it a lot in people like Senge, (sp?), if we look at the populist end of systems thinking.

The reality is that actually it’s just bad science. It’s just not the way things work. People have never made objective decisions based on the evidence. It’s just really from the 1940s until recently, they trusted experts to do that for them, and that actually hasn’t panned out very well. So they’re trying populist (sp?) for a change. We just don’t have the cognitive capacity to make decisions, as a broad population. And assumptions of information and rational decision making will actually mean that things get worse rather than better, they’re too easily exploited by the likes of Trump, Dominic Cummings, people like that.

What we’ve done is to combine three core concepts. One is a strange attractor in complexity theory. And a strange attractor, if you look it up, you’ll find a thing called a Lorenz butterfly. The agent never follows the same path. But even though they never follow the same path, there’s an overall pattern. They’re quite beautiful when you actually look at them.

The other is to go into epistemology. And if you’re going into Deleuze, particularly DeLanda’s work on that, what’s called an assemblage, and I’m interpreting assemblage here as a pattern of narrative, which now exists independently of the storytellers and acts as a downward constraint on what people are prepared to see or believe.

In narrative theory, which is one of my backgrounds, that’s called a trope. I intensely dislike the term “meme.” It’s based on a false metaphor with Dawkins’ concept of “the selfish gene,” which isn’t taken seriously by any geneticist I know. The idea there’s something seeking to replicate itself is a bad framework. The reality is, there’s a pattern of multiple micro-narratives, which now resonate against each other, which prevent people from breaking out of that micro-narrative.

And that links in with the fact, the famous experiment where you give radiologists a batch of X-rays and ask them to look for anomalies. And on the final X-ray, you put a picture of a gorilla in plain sight, which is 48 times the size of a cancer nodule. On average, 83% of radiologists won’t see it, even though their eyes physically scan it. And the 17% who do see it, come to believe they were wrong when they talk with the 83%.

Now that basically comes back to where I started this. People do not see what they do not expect to see. We only scan about 2 to 3% of the available data before we make a decision, and we generally do a first-fit pattern match with our most recent experiences. So if that’s the reality of how people make decisions, we need to think about how we start to change the tropes. And there are a whole body of methods around that which actually come from biology. For example, retroviruses, start to integrate (sp?) negative attractors, looking at what’s called the adjacent possible, which is the next generation on from behavioral economics. Which actually doesn’t nudge, by the way, Yanks.

Behavioral economics is deeply manipulative, and is actually as far as I’m concerned at the moment, it’s certainly in the UK a major part of the problem, in terms of the way it’s going about things.

So one of the key things you get out of complexity theory is the concept of what’s called the adjacent possible. And this is some of the stuff we do with the SenseMaking tool, is we map the underlying micro-narratives of people’s day-to-day existence.

We’ve used, for example, children as ethnographers because they’re better than adults, consultants, and we use those to create fitness landscapes in which you can see where the tropes could shift to. So you don’t talk about how they **should** be. You talk about something adjacent to where people are, which is going in the right direction. And with that we get what we call the vector theory of change. Because then you start to ask, “What could we do tomorrow, to create more stories like these and fewer stories like that,” rather some sort of idealistic future state.

The other key lesson to come out of complexity is that connections matter more than things. To be very brutal about this, people don’t matter. How people **connect** matters. For example, when I was working on peace and reconciliation in Northern Ireland in the seventies, we had two approaches.

One is the Corrymeela approach, where they got people together from both communities in week-long workshops in which everybody agreed they would love each other and they could live in peace and harmony. Now, this was wonderfully satirized in the first episode of series two of Derry Girls, by the way, in which the Catholic girls are forced into trust exercises with the Protestant boys, looked on by the nun, who I think is the best character in the series. If you haven’t seen it, go and watch it.

It didn’t work because within days of actually going through the workshop, people were back in a different context, and were throwing petrol bombs at each other again.

I was working in the Glencree Centre there, and as a Jesuit, what we did is we took asymmetric groups, two Protestants, one Catholic; or two Catholics and one Protestant. Then we threw them into Latin America for six months, and we didn’t talk about the Troubles.

What we did is, we changed the connections between people, and we changed the context in which they were having their discussions. And I have a huge difficulty with a whole bunch of Boston Brahmins on this, because they genuinely believe that all the world’s problems could be solved if only competing people came together, facilitated by said Boston Brahmins, and listen to reason. And that ain’t going to make any difference.

So, connections, action, are key. And my definition of sensemaking, I’ll just put a chart into the thing. This has been published recently. Mind that my definition of sensemaking is, how do we make sense of the world so that we can act in it? And with that, comes a concept of sufficiency. So it’s, how do I know **enough** to have confidence in the actions that I’ve got to take? And key on that is, you’ve got to have distributed cognition. You need huge human sensor networks that can map what underlying attitudes are, and can map how those attitudes can shift. It’s not a matter of deciding how things should be.

And final controversial statement, foresight is meaningless in a complex world. Because you will always get it wrong. What really matters is an accurate description of the present. In complexity, we kind of like manage the evolutionary potential of the present, and identify what we can change, what can’t we change, rather than trying to forecast where the thing will go.

So, is that what you wanted, Phoebe? I presume you brought me in to say something like that. I never know with you. I assume that was it.

Phoebe: That was absolutely the plan, especially the part about the gorillas, that was, that’s all gone to plan. I mean, that’s fantastic. And a lot to start with. I think the thing I love – you know, I love all the stuff about biology, and I feel like maybe digging into the retroviruses and these patterns from biology, the work that you do at Cynefin. It’s a Welsh word, it’s purposefully difficult to pronounce, isn’t it, Dave? So putting their own…

Dave: Welsh is phonetic! English isn’t phonetic. Welsh is phonetic. We just have a different alphabet. :-)

Phoebe: I just wanted to set the record straight. Um, what was I saying?

Yes, it will be great to dive into the biological stuff around Dawkins and memes, and that’s brought up a lot in the narrative space. That memes are a bit like genes, and they just want to self-replicate, and you kind of point blank said, absolutely not. The bit that I really want to add in here into the whole conversation around effective global cooperation, which I believe, and many of us believe, depends on effective global sensemaking. But there’s this piece that I think you didn’t touch upon, which is around the effect of moving from broadcast news, to you know, telegraph to television, which was still somewhat centralized and kind of “source of truth,” and this movement to decentralized media, which I think many people thought was democratizing sensemaking, democratizing news.

And so everybody can publish what is going on and publish the truth. And now we’re living in this kind of in this, actually, much less democratic reality because those platforms are being constantly hijacked by algorithms which are sorting through the enormous amounts of data that people just don’t have time to look through.

So even if you spent hundreds of hours online trying to read about a certain topic, you’d still only cover .1, .01% off the data out there that covers a topic of interest. So then you’ve got these algorithms which are trying to personalize the news and data towards what you find interesting. And then it’s having a massive effect on democracy.

And people are living in these echo chambers where they believe that what **they** believe is the only reality. And they’re hardly having any contact with the kind of opposing views and people who hold opposing views. So we start to create these kind of mimetic echo chambers, which are far more dangerous than they sound, because suddenly you don’t have people who appreciate that there are different people with different points of view and there are multiple truths. There’s this massive polarisation happening, and I think that’s just important to kind of bring into the discussion. And it’s also the focus of the project that I’m an adviser to, called the Consilience Project that our mutual friend, Dave, and I think also with Foresight, Daniel Schmachtenberger is leading. And so I can also go into a little bit about what that project is doing, and other topics.

But I’m keen to more have a conversation with you, Dave, than go one after the other, and talk about our own stuff because, yeah, we don’t get the opportunity to talk that many times.

May I just pick up on the AI point? I mean, I wrote a blog post recently, which was called “Big, Thick, and Rich.” And Trump was on my mind at the time, so I couldn’t resist the title.

There’s a whole body of contrast between **big data** and **thick data**. So big data is the algorithmic sum, from where meaning comes with very high volume that is slight (sp?). And there’s a whole bunch of anthropologists and ethnographers who are arguing they should be given gainful employment by producing thick data, which is high in meaning but lower volume, but takes a huge amount of time to complete.

The work we originally we did with DARPA, which is what we call **rich data**, is to make people their own ethnographers. Which means we can scale to very large volume, very high levels of meaning, because power comes not from information, but from who interprets the information. This is a key thing in the whole epistemic justice field, which is one where we worked in. Because at the moment, the algorithms are all being written by young, misogynist males in IT companies in the west coast of the United States who take Ayn Rand seriously after puberty, which is a very dangerous thing to have to deal with.

And everybody forgets in AI that what really matters is the goddamn training data sets. And if you have black box training data sets, you’ve got a problem. One thing we use SenseMaker for is to **generate** training data sets. And it’s not about the algorithms, and not about it’s the control, it’s the training **data sets** which matters in AI, in terms of volume.

Sorry, I once got blocked from Wikipedia for three months. I was blocked from editing the Ayn Rand page but was allowed to contribute constructively to the talk page. But the Ayn Rand followers were all blocked for at least a year, so I considered myself a necessary casualty of that battle.

Phoebe: Lou or Allison, do you have specific questions for us? Or I think another thing that I’d love to go into is global governance and cooperation. And what are the things that are necessary for that kind of global cooperation and sensemaking.

Lou: Well, I do. I do have a question. And perhaps it fits into with what you want to talk about it, which is that I would love to hear from both of you. I would love to hear you paint your ideal picture of this post-COVID-19, cross-silo collaboration world. How does it work? Who is cooperating with whom? And how, with which consequences? What can we do well?

Dave: Phoebe, you’re going first this time?

Phoebe: Yeah, sure, I can go for it. I think that’s a tough question. I’m biased towards polycentric governance. And I get excited about the idea of kind of fractal governance and fractal sensemaking. So can we have, can we bring back an element of locality to sensemaking, and then emergence of different, community, local sensemaking that’s able to feed into layers or levels of higher-up, nation-level or by-a-region-level and then global levels of sensemaking and then also decision-making. That’s as far as I’ll get in this in this first (sp?). What do you think, Dave?

Dave: Okay, so let me build a bit on this, right? I think the whole concept of “one person, one vote,” and the basis of so-called “Western democracy,” evolved for much lower populations, without the longer-term problems that we now face. A democratic system which is based around three- to five-year election cycles isn’t going to be able to make the decisions that we need to make to actually survive as a species, and we just need to get real around that. And I speak of, I’ve got great grand-uncles who were deported to Australia for being Welsh Chartists. So this is a long-term tradition.

I think there are other things we need to start to do in terms of engagement, and I think… We’re doing some work at the moment with (sp?) and others on different feeds into citizen engagement processes. So citizen juries, citizen assemblies. And the problem is that they’re much vaunted at the moment. But one of the reasons is that people haven’t really studied them in depth, and we’re getting what’s called the Hawthorne Effect, which means something novel always works the first couple of times. And then people try and scale it, because… You should never scale a **how,** without understanding **why.** That’s one of the basic principles.

If you don’t understand why something works, scaling is quite dangerous. And of course, its great success was a single issue, namely abortion in Ireland. Whereas, for example, climate change is dealing with **very** complex issues, which are not resolvable in that sort of way.

So one of the things that we’re working on, and this is a program I started eight years ago, and I remember right… Where we got children – we’ve done this now in Colombia, in Egypt, in Libya, in Pakistan, in Wales, in Sweden, in Malmo, and elsewhere – is to get children to act as ethnographers to their own community, and to go out from their schools every week and gather data. This is quantitative data. This is my distributed ethnography, rich data. And that means we’re not sending in external experts and we’re not sending in big data. But I’m getting huge volumes of data very quickly from which I can draw the landscapes.

Now we famously did this in Wales to inform citizen juries on social service impact. There’s a project called Measuring the Mountain, which you can look up. And I argued eight years ago that we needed to make that universal. We needed every child at the age of 16 in every school in the world acting as a journalist to their community, because that was the only way to give authenticated data. You don’t get it through opinion polls. You don’t get it through big data. You don’t get it through algorithms.

And I remember writing then, that if we ever have a major pandemic, we’ll need that network in place. That was one of my five reasons why it should be invested in. Now we didn’t get the investment to build up, but we’re talking with people now about it. Because you need to **inform,** multiple, distributed, engaged decision processes.

And that changes the way, for example, you do delegative government. I mean, part of the problem we’ve got at the moment… In the good old days, when we were in Europe, and please don’t take me there, we had, like, three European MPs for the whole of Wales. It’s like one person per million population. There’s no way you can know people on that. So you’re just voting for a slate.

So actually, you know, “one person, one vote” doesn’t work once you get above about four or five thousand people in a constituency, because human judgment can’t be exercised, because of the simple volume. So I think we need to start to think about distributed mechanisms for decision-making, and we need to look at ways in which we **inform** those.

But those need to be the sort… I mean, my children is one example of that, but that gives me a statistically valid sample. It also links, and if you don’t know, the Future Generations Act in Wales, we’re quite proud of this, we’re the only country which passed legislation which says, no legislation could be passed by the Senate, that’s the Welsh parliament, unless it explicitly takes account the needs of the next generation. So we actually legislated for forward thinking. And that’s now being talked about in the UK and elsewhere.

I think that sort of distributed process, we’re starting to build the mechanisms. But citizen assemblies and citizen juries are poor if they’re just gathering a group of people with higher levels of facilitation. We need to think about the ways we **inform** them, and then we distribute decision-making, during that process itself. So a lot of us are thinking about this. And a final point I’d make, which sort of links in with Rachel, all right, because I just saw your cat. If you want a general principle on this, people who are owned by cats generally understand complexity. People who own dogs, they’re trying to avoid it. :-)

I could never resist that one. :-)

Phoebe: I also wanted to bring in, I’ve been thinking about this word “sensemaking,” which has really kicked off, especially in the last six months with COVID-19, when people started to realize that their trusted institutions are telling them not to wear masks, and then, a meme on Facebook that’s gone viral is showing the scientific data that wearing a mask decreases your chance of getting COVID by 80%.

And this sense of the places we used to look towards for trusted sources of information that can save your life are breaking down. And actually, then sometimes what you see on social media through these collective intelligence processes, are **more** trustworthy. But then, sometimes it’s completely false.

And that there’s actually no way of really **knowing** what is true, what is false, and people then start to look towards, trust, in a kind of, almost like, liquid democracy style, looking to the people they know, who you know, that person’s got a degree in biology, so I trust them what they post about viruses. But that person’s got….

So we start to kind of look more locally, which I think is quite interesting. Like we kind of delegate our trust towards the people that we know and have seen showing up again and again as trustworthy individuals.

Dave: There’s a key principle, Phoebe. Anything an algorithm can interpret, an algorithm can create. Right?

Phoebe: Say more?

Dave: Anything an algorithm can interpret, an algorithm can create. And the people with **most access** to resources to create those algorithms are generally not on the side of the good.

Phoebe: Indeed. Exactly.

Lou: And both of you, are there real world models that you see, others, maybe globally, that work already and that we should enlarge, try to push behind, or take as an example, try to implement more, and prototype?

Phoebe: Do you mind if I jump in, Dave?

Dave: Never. No, no, no, give me some breathing (sp?).

Phoebe: I don’t think there’s a solution, like one system. I think trying to think of the perfect structure that will solve all sensemaking, that in itself would worry me that there’d be any such top down, any source or single structure that would have that level of power.

I think instead what I see is a lot of really exciting and inspiring pushes towards the different levels and components of a bona fide global sensemaking infrastructure.

So just earlier today I was talking with Tony about on the bottom of that, the level of data, like reliable data in ways that is, you know, data commons that people can access and data that’s visualized in ways that everyday citizens could even interact with. I think that’s like a very… data meaning numerical and quantitative data.

Then I also think about news and story data – where we start getting our information and privileged access to information. So this is one part of the Consilience Project, is about taking intelligence reports at the level of sending to senators and institutional leaders and people in powerful positions – these kind of intelligence agencies that usually worked privately.

So the Consilience Project is about taking these intelligence reports and trying to make them public. So how do we create really trustworthy, publicly-accessible intelligence reports – like, this is what is happening in the world right now, and having that in different geographies. Then, as well as data, as well as stories, then you’ve also got people’s ability to do sensemaking, and given the things we talked about around algorithmic, limbic hijack, and biases, and control that happens on the algorithmic social media level, actually educating people in how these narrative warfare methodologies work allows them to disarm them, and become more immune.

I know, Dave, you said, “Oh, people think if you just educate people and prepare them to do good sensemaking, everything will be fine, and it’s not the case.” But I would say that given the specific media ecology we’re in and all of the very toxic warfare that goes on around, like trying to hijack your attention and you know, even really basic stuff…

I have a science degree, so I studied molecular biology and genetics, and I think that’s partly why we get on so well, Dave. But even that basic training in undergrad. You learn to look out for, like, cherry-picked statistics – like really, really basic stuff, or you get used to reading papers and being on the lookout for when data is just being manipulated. Looking for, like a log axis… where it’s just really easy to manipulate data to make it look the way you want it to. And so those kind of basic skills, I think, could become part of like a basic citizen training for making sense of the world.

Dave: I think we need to look at processes which generate good behavior rather than trying to train it directly, and this is a problem you have with a lot of education. People see that there’s a deficiency and they decide, for example, in people’s ability to criticize. And they think, therefore we will train them to be critical, and that is too limited.

So let me give you another example. When I first went up to what was then a grammar school at the age of 11, I still remember on the Friday, I walked to the front of the class and I got given a record card. This was at the time when we had all the debates about capital punishment in the UK, it was that period. And the card said, “you support capital punishment.”

And I had to speak for seven minutes, without preparation, for something I think is abhorrent, and argue for it. And we did that every week from 11 to 18. And that meant we read everything, because we didn’t know what we were going to get hit with. You never knew what you were going to have to have, you learnt to argue cases. Effectively, a very simple social process made us hypercritical and made us generalists.

It’s coming back to this key thing. If you look at human evolution, things happen indirectly, not directly. It’s my point about taking people from two sides in Northern Ireland, dumping them into Latin America. You’re far more likely to influence people indirectly rather than directly.

And this is kind of where we’re going on software development at the moment. If you can entangle politicians’ own stories with stories of the people who they are adversely affecting, they’re far more likely to change, than if you argue with them logically. We’ve actually found out, numbers backed up by stories will change people.

And I hesitate to say this with Forrest on the line, because he and I have debated this at length on the top of Powder Mountain in adverse circumstances. With too many New Age fluffy bunnies for my own good, all right.

But we actually need to focus on ontology, not epistemology. Everybody jumps in on epistemology. They don’t realize what really matters is the nature of the system you’re in counts more than the type of knowledge or the way you talk about it.

And I think the other key lesson on this is you need to realize we live in a context-specific world, not a context-free world. So people **keep** trying to create universal constructs. I mean, it’s the big debate, you know? We wrecked the Middle East, in part, because we thought that gifts were bribes. We didn’t understand the way that gifting worked in tribal cultures. So we interpreted it in the wrong way.

Different things work in different contexts, and what we **need** is the ability to generate and replicate, by sort of adjacent copy, in those different contexts. So there isn’t a universal approach to democracy. The British approach, you know, evolved over several hundred years, in fact, several thousand years. It’s the end point of an evolutionary process, and you can’t copy the endpoint of somebody else’s journey. You can’t replicate that. So context is everything, and I’ll come back to that, changing interactions, changing systems, that allows new solutions to emerge. And that’s the point about managing the present, rather than trying to decide what the future should look like.

You can’t not get involved now, Forrest, after I’ve done that. :-)

Lou: Forrest, would you like to say something?

Forrest: Well, first of all, I’m actually really liking the points that Dave is making. The points that he’s making about social process I actually really agree with most of what he’s saying. The debate that we had on the mountain was more about metaphysics and not so much about social process, so I distinguish those two.

And I think that what I’d rather do than making some statement or presentation, is just ask a question. So, very much agreeing with the notion of really good, solid characterization of the present is essential, and that our current governance systems are for the most part not really effective at dealing with large-scale, long-term, chronic problems.

But in the sense of exploring how to find solutions, finding the adjacent possible and such like that, I wondered if you could speak upon the notion of **valley crossing** versus **incremental change**. So, in other words, while I very much agree with all of the notions that you’re stating here, it sounds like some of the problems, particularly in the areas of existential risk and such like that depend upon really understanding deep principles, really understanding things as you mentioned earlier at a “why” level, so that we can really have a kind of expertise to identify what the next jump would be.

So in other words, while we can basically look at adjacent possible and things like that, what sort of characterization can be created to allow groups of people, what sort of processes do you envision that would allow groups of people to see things that would be valley crossing type solutions? I.e., characteristically different ways of thinking about things, that might not be imaginable scenes or the kinds of narratives that we already have present. Again, this is an exploratory question. I’m not expecting an answer. I’m just curious to know if you’ve been thinking about this.

Dave: We did start this conversation in the freezing cold on Powder Mountain, so we’ll carry it on, but I’ll try and bring everybody else in on it. All right? This is, kinda like where we look at fitness landscapes. What fitness landscapes do, is they identify way you can get shifts, right? And by the way, there’s a lot more value in epigenetics than there is in genetics, if you look into human systems.

That’s the other reason to be anti-Dawkins. We now know the mechanism by which culture inherits, and that’s actually quite important. So one of the things is there timers… This is **apex predator** theory, which I’ve written on. There are times when the ecosystem gets so disrupted that something novel can emerge. And whatever emerges… So when the meteor wipes out the dinosaurs, you wouldn’t expect the first mammal to be the next apex predator. But it is. Because something very small and highly energy efficient then exploits a disrupted ecosystem, and then becomes the apex predator. And the system organizes around the apex predator, and they can’t survive.

Now, we’ve had that, with America has been the apex predator in geopolitics, but it’s just collapsed. America is **not** going to recover its previous position, even if, pray God, it doesn’t re-elect Trump. And that’s to me 50/50 at the moment. But it’s never going to recover where it was. We damaged Europe. We needed Europe as a… something to stand up against Chinese, Russian, and American tyrannies because neither of those three countries has been a democracy. America hasn’t been a democracy for 40 years. It’s what in British political history is called a rotten borough. You have to have so much money to get elected, it’s not an open democracy. So we’ve lost that century.

But COVID has given us an opportunity to think. Also, public awareness of climate change is now starting, because they’re getting personally affected by it. Heat waves, the consequences… South Florida has finally realized there may be something in this, because they’re all about to drown. But North Florida still thinks it’s a myth, right? But those sort of changes are coming.

We’ve got to find ways to associate COVID with climate change with Black Lives Matter, which is the epistemic drive. Because that’s a flex moment in time where boundary crossing is easy. But boundary crossing is going to be far more difficult in three or four years’ time. So you need to be able to monitor those spaces to make the changes I think.

It’s all gone very quiet…

Phoebe: Forrest, were you trying to say something back but you were muted?

Dave: You’re muted, Forrest.

Phoebe: And then I want to go into epigenetics and a little bit about that.

Forrest: … we got ourselves crossed because we were unmuting both at the same time. So, in the sense of talking about things like existential risk, and you’re saying that there’s a kind of opening that’s created in the potential landscape for new possibilities to emerge? But when we’re thinking about existential risk we recognize that there’s a kind of absence of safe-to-fail probes, that we might not have enough time for evolutionary process to create options… the options that exist in the landscape to emerge as a new force in the world, so to speak. In the sense that we may need to actually do some intelligence work to try to create those possibilities, emerging more quickly or emerging in a more effective way, that we can trust that there’s essentially an appropriateness to that response, rather than…. I guess what I’m trying to get to is, is there any capacity that you see to do things that don’t depend upon large epochs of time or purely local feedback processes to emerge solutions?

Dave: I think there’s a biological model. I just finished writing a section of the EU handbook, which says, “The way you emerge from a crisis, is you focus on forced exaptation, not adaptation.” Exaptation, in evolutionary biology, is the process by which you repurpose existing traits for completely novel purposes. And that’s something we desperately need doing on climate change. We haven’t got time to invent new technologies from scratch. We’ve got to repurpose. And we’re actually quite good at it.

Phoebe: Dave, do you think we even need new technologies at all? Would you not say that we’ve got most of the technologies we need to tackle climate change?

I think we’ve got most… That’s my point, right? We’ve already got most of them. So it’s like when somebody notices a chocolate bar melts in their pocket and realizes the significance, we get microwave ovens. That’s the 1945 example. Now a lot of our work, and this is the work we originally did for DARPA, is how do you associate unarticulated or articulated needs with existing knowledge bases in novel ways.

the way you do that is through abstraction. It turns out the role of abstraction in human evolution, because art is fundamental to human evolution? Which is actually why the focus on STEM education is potentially a disaster.

What abstraction does is, it allows you to make novel connections because it removes you from the material. So you suddenly see connections you haven’t seen before. And so a lot of us are now working on this, is how do you generate exaptative moments or associations.

We just spent two years working with people from RAND and from Stanford, on a complex approach to design thinking, because the current design thinking approach is deeply commodified, and is highly linear. If I see that double diamond again, I shall go quietly insane.

So we’ve actually been working on a complex systems approach, which is how do you map unarticulated needs against existing knowledge? And that sort of association is highly generative in terms of novelty. And I think that’s where we start. I did a lot of my original work in Kakadu with aboriginal groups. There are models of economic transfer that we could exapt from aboriginal communities, that we’re not thinking about, because we’re obsessed with blockchain and means of exchange, rather than thinking, for example, about gifting. So it’s not that there are things out there we can’t use. We’re just not bringing them together in such a way that they can exapt.

Phoebe: I’d also add, Dave, that the majority of people have been through a highly reductionist education system. And there is actually a crisis of lack of perception of complexity.

Dave: There aren’t any generalists left, under the age of 55, in the UK or the US.

Phoebe: I’m going to take that personally. :-)

Dave: … to eliminate them. Well, there’s always going to be some outliers, but in general, it’s a problem. Because the educational system started to focus on high levels of specialization. And modular education was a disaster in that respect. Pass a module, tick a box, move onto the next one.

Phoebe: I’d also say that whenever we’re focused on solving a problem, if you’re just focused on solving these siloed problems, that’s also forcing a lot of design thinking built on the back of technology, like trying to solve problems and trying to design towards solutions.

If only Nora were here as well, we could…. It’s also worth mentioning warm data – thick, rich, and warm data, the kind of missing data of complexity. And I think that warm data has a huge role to play within sensemaking as well. We haven’t even mentioned narratives and storytelling and myths, which completely, they’re kind of what we swim in, they help us make sense of the data. It’s not as if we simply make sense of data in a cold, mechanistic way. It’s also about what are these stories and myths that we’re bathed in, and the warm data, the murky stories that in our subconscious. So I think it’s worth mentioning that, too.

Dave: … few phrases which pick up on that. One, I coined a long time ago, I said, “We need to focus on **messy coherence**.” And people… generally, messy coherence means there’s structure in it. And with that there’s another phrase, called **coherent heterogeneity**, which I’ve been explaining at government level (sp?).

So coherent heterogeneity means there are differences, but we can get coherence and the easiest way I can explain it is… You probably realized from the background I’m Welsh. And in Wales, we have a religion called rugby. It’s not a sport. It’s far too serious for that. And I support the Cardiff Blues, who are a highly intelligent, disciplined team who always play fair, and they’re much put upon by evil referees and uncivilized opposition.

And down the road, there’s those bastards in Llanelli (sp?), a bunch of ten men who bribe the referees, foul on the pitch, and shouldn’t be trusted near any civilized individual.

But when the English arrive, we’re Welsh. And that’s the only thing which matters, is defeating the English. In fact, Wales is largely defined by that, as is Ireland, as is Scotland, as is most of the world when it comes down to it.

Now that’s called “coherent heterogeneity.” And part of the problem you got with the Theory U, the Senge, or those sort of things is an attempt to homogenize to solve the solution. And, of course, that means you will always lose to people who can make differences. Because human beings like conflict. You’re not going to get rid of conflict. The issue is to make the conflict something which is coherent, which can move forwards, rather than trying to eliminate it.

Phoebe: What was the word, “coherent heterogeneity.” Could we simplify that as just, like, “diversity,” a “union of diversity?”

Dave: No, because that feels terribly platitudinous to me.

Phoebe: Doesn’t sound clever enough. :-)

Dave: My background is philosophy and physics. So I have a passion about language and scientific precision. I’m open to simplification, but “coherent heterogeneity” sums it up well.

Phoebe: Well, we have this debate, don’t we, because I do worry that a lot of this work needs to get out faster to the world.

Dave: Cynefin is the best Welsh known word in the world. We’re used in all U. S. military forces now. So you can get the stuff out. I mean, every single U. S military force, at colonel level, is taught Cynefin, which is a complexity framework.

And in the eighties, people said systems thinking was academic. And then five years later, it dominated. And we’re seeing the same with complexity at the moment. And by the way, complexity thinking it is **not** systems thinking. Please don’t confuse them.

Phoebe: Thank you, that’s a great… That’s very important. I agree.

Lou: I kind of want to give you a chance to maybe wrap your points, if you want. If you feel like there’s a little bit more to say on this one. Just so that we can take a few questions from the people who are on this call, because I see some good ones pointing out in the chat.

Phoebe: I’m up for questions.

Dave: I’m up for questions as well. Go for it.

Lou: Amazing. Rachel, would you like to ask your question? I’m going to unmute you.

Rachel: Well, first of all, thank you, David and Phoebe. This is really fun. I like a lot of the points that you’ve made. I’m wondering if there’s **one** idea emerging from your research and individual thinking that you’d like all of us here to appreciate, maybe people around the world to appreciate, what would it be and what would change if we all believe this in the same way that you do?

Dave: Okay, I’ll go first. If you pay attention, on what I said on the combination of assemblage theory, strange attractors, and tropes, and the big thing which would make a difference, is if we had every 16 year old in every school in the world as ethnographer every week in a publicly accessible database, a lot of these problems would go away. I’ve spent 10 years of my life working on that. We know how to do it, but it needs to scale. We’ve got to increase human agency at the **start** of a data system. The trouble with big data is human agency comes too late.

Rachel: Great.

Phoebe: Rachel, was your question, “Which piece of your research or work would you most want everybody to know about?” Is that it?

Rachel: I think maybe even a little more specific than that, Phoebe, because you’ve done this research and work and you’ve got your own lens on it. What’s the one idea that you really believe to be true, that you wish all of us could know, and if we all knew it, what would happen?

Phoebe: One idea, okay.

Rachel: Or piece of thinking.

Phoebe: I think the thing I just talked about around perception of complexity. I think right now I’m really obsessed by perception, and this idea that actually, the reason we keep moving through these loops of kind of broken thinking and solutions that don’t work and actually create more and more problems is because we’re perceiving a simulation of a kind of linear reductionist reality and trying to overlay solutions. I mean, just like our education system and many, many others.

This isn’t an original. This isn’t an idea that isn’t thought of before. But I’m **really** interested in ways that we can **shift** towards perception of complexity. And I think there are many ways of doing that, and training that throughout life. I think people who go through biological science training, for example. When you’re learning about these, when you just go through lots and lots of different case studies of living systems and biological systems and start to understand how those work, I think that helps you develop a lens towards looking at the world of social systems and problems in governance, and I think there are others too.

I actually think art should be a necessary subject in every child’s schooling because I think just having a practice of art – making art, painting, creative process, is also ways towards having more of a perception of the world as it is, and actually not just overlaying frameworks. I think design thinking has actually been incredibly dangerous to (sp?) perception because, you know, living systems are not… they cannot be double diamonded. That’s a bigger debate, and I also have a lot of respect for the design world in other areas. But I do think it’s time for a massive revolution around perception.

Rachel: So if we believe this the way that you do, Phoebe, would we focus on public education, and making shifts and reforms there?

Phoebe: I think so. I think education, yeah, public education, and not just… education and **practice**, because a lot of education is about kind of teaching **things** and **skills**. But actually, as Dave says, the participation in making sense, the participation in critical thinking, and debate, and multi-perspective, having to think about what other people might think, and mapping out why, and that sort of complex thinking I think is part of it, yeah.

Dave: The thing to remember is young people change adults more than adults. I mean, I come from Wales, which is a matriarchal society. So you’re mildly worried about your wife. You’re scared of your daughter, you’re terrified of your mam. If your grandmother tells you to do something, you do it. And if you’re great grandmother is angry with you, leave the country and wait for permission to reenter.

But the point I’m trying to make there is that one of the fascinating things about the work we’ve done with children. For example, when we got children to investigate adult obesity, the children changed their behavior. Ironically, that project was funded by Victoria’s Secret. I’ve never forgotten that one.

But what we then found is that then, actually, the children would influence the adults in a way that researchers wouldn’t. And I was reading some reports coming out of one of the Democratic sources in the States, which is basically saying the way you actually turn women from Trump to women against Trump, is to get their children to talk with them, because that’s more likely to achieve a change. So this concept of children as journalists and journal keepers and those interventions on a wide scale, I think has a lot going for it in terms of the way we achieve change. And in which (sp?) they are the future.

Phoebe: And I guess, something that’s always said is children’s imagination is far more… their creativity is far less…. unbridled. There’s been much less kind of shutting down of, I think, a lot of the senses that we have when we’re children, which could be very important.

Dave: It’s all linked to brain plasticity. The work we did in South Wales was called transgenerational pairing – we replicated that – is getting young people to pair up with people in their grandparent’s generation. Produces better innovation than just leaving it to young people. We know that between about 25 and about 45, 50, there’s not that much innovation. After that, you see, people’s brilliance in humanities generally comes later on in life, in sciences, early in life.

Innovation for older people is synthesis and integration, so by coupling knowledge of the community and the ability to synthesise, with naïveté and bright ideas, i, a distributed way, you can achieve more change. Youth … they don’t have … idealistic … the leavening of older people in it.

Phoebe: I was just saying it’s a little bit of hybrid vigor, although that’s usually about different species. But, you know, hybrid vigor of thinking.

Dave: It’s how we evolved. I mean grandparents were the teachers. If you survived into your forties and happened to gather a community, and not many people did, you had something about you. But you stopped leading the tribe, and you went into child care and teaching. So we can see some of the evolutionary biology behind that pairing.

Phoebe: Dave, I’ve got a question for you that is somewhat related. But also it’s just something I’ve been wanting to ask you for the last couple weeks and haven’t got round to it because life is too busy.

You still work with large organizations and institutions, and I think there’s a part of me that has kind of lost hope that any of the change is really going to happen from inside the institutions, because the structures and the pull towards linear thinking. Even when you kind of go through, I’ll do a training with an organization and they’ll all really get it and they’ll be in this space of perceiving complexity. And then suddenly it’s time to build a strategy, and it’s like, “Well, we’ve now got to snap back into default ways of thinking.” And I’m just curious about what you think about that.

Dave: First of all, I think quite a few of them **can** make real change, right? I mean, one of the reasons why I work with the military and the intelligence community – and my mother was, you know, like the rest of the family, good socialists, always used to tell me off about this and say, “The trouble is, if you find something interesting, morality goes out the window.” Now, I’m prepared to defend myself against that with you guys, but not with my mother, when she was alive.

But basically, we’ve had more adoption of complexity in the intelligence communities and the military than the industry, and they’re **very** big organizations, and they tend to innovate…. Because, to be quite honest, I can get generals in America to appreciate complexity, because people they know are going to **die** if they don’t think differently. And it creates an imminence to the way they think about things.

I came within 10 minutes – I think I would win it now because I know more. I came within 10 minutes of switching the whole of IBM Global Services into a complexity-based model. I’d been funded for two years to work on it, but I called one sentence wrong with Ginni Rometty at the wrong time and triggered a reaction.

So I think you have to work with the big guys and with the small guys. It’s not an either-or, it’s a both-and. And if somebody really big does change, then that can actually have a major impact.

Phoebe: I totally get that. But I guess there is still the question of, if IBM changes and has complexity thinking, they’re still IBM. They’re still, you know…. To what end?

Dave: They’ve got, I mean, they lose more money in the sofas in Armonk than I could acquire in my life, right? They’re bigger than most small countries. If you look at it, the big guys, I mean, Facebook is definitely in a very bad place at the moment. All right, but it’s kind of like too big to fail. Now we know that the tech companies are having conversations at some levels, because they realize that part of the problem, they’re not part of the solution. I can’t go much into that.

Large companies have a bigger influence than most governments. That’s happened, all right. It is too late to stop that. So I think you don’t know what’s going to work. So you try everything. It’s the parable of the sower. Seed is cheap. See where it grows. So throw the ideas around, and see where they get taken up, because you can’t predict it.

Phoebe: Do you have any new questions? Ah, we’ve got, Forrest has asked another question in the chat.

Lou: I’m going to unmute you, Forrest.

Forrest: Hi. So, what would you recommend that we look at, as far as good thinking in institutional design, or, not even using the word institution, but social process design.

There’s a lot of different things that have been tried and done, and obviously you’ve done a lot of work in the space as well. But if we were to create communities that would have well-conceived social process to be able to do thinking about exaptive use of technology that exists to solve existential risk things.

What kind of social geometries, institutional design, community design would you recommend that we pay attention to, or that you think embodies good thinking or good process technique, to address some of these issues. That are forward thinking and integrated in these ways. Again, I’m just looking for hints here.

Dave: I think there’s a few around. We were engaged in supporting the Welsh Audit Office in a major study of cooperatives. If you look at the fishing cooperatives on the east coasts of America, who were interesting, where some of the first complexity studies were done with Peter Allen, who proved that if an individual trawler tried to optimize catch, then the overall performance of the fleet was suboptimal. That you needed suboptimal individual behavior, for the system to be optimal. And that’s been proved a lot of times.

And Mondragon in the Basque country of northern Spain. So these are 20 or 30 (sp?) massive industries which are cooperatives, because they evolved around certain principles with real interests of people. So I think that’s one area of interest.

I think the other area, though you’ve got to be careful about this, because there’s an awful lot of New Age fluffy bunnydom done around this, is indigenous communities. And I’ll come back to the concept of a gift.

Now, a gift is not a barter. It’s not an exchange, it’s a membership fee. That’s what people need to understand. It’s an entry. If you don’t gift, you can be excluded. But you don’t expect to get the equivalent of your gift back. It’s not a favor bank, to use the language of social capital.

Now, there’s absolutely no reason why in society at the moment we shouldn’t give free-at-the-point-of-entry healthcare and education to every available person. We just choose to ration it with money. And what’s actually happened is the means of exchange has become the end in itself. And blockchain is going down exactly the same route

So I think there are **economic** models based on gifting which we need to start exploring. I’ve been trying to get funding for that for ages, but I think it’s too radical an idea?

The work I did, which translated to a whole bunch of methods, particularly the use of **conflict** in decision-making, came from studies in Kakadu. The whole idea about ritualized assent and ritualized conflict. And we built that into a mechanism we’re just publishing with the EU, called a Tricotocon, in which three groups of experts come together in a **highly** structured dance, which is highly ritualized. So if you can ritualize conflict, you can explore meaning. So there’s a whole body of stuff we can draw on. We just need more people doing it. And we need more visibility for it.

Forrest: For that last one in particular, where you’re talking about three expert groups and a ritualized conflict negotiated. So there’s a social process. When you say “ritual,” I’m thinking that there’s a series of behaviors or particular dynamics of interaction that are codified in a common knowledge.

Dave: Yes, there are. We’ve done a lot of work we’ve found with masks, and avatars, because what ritual does – remember I said, you don’t see the gorilla? Well, it’s quite interesting. I can actually ritualize a point, which means you **will** see the gorilla.

So what ritual does is it changes cognitive activation patterns, and it switches roles for people. So one of the functions of ritual in human sensemaking is to trigger a different cognitive framing of the problem. We just don’t use it enough. I mean, if you do any indigenous studies, you’ll see **huge** uses of ritual. And I’ll give the illustration. When I put on my blue Cardiff Blue shirt, I feel differently than when I put on a dinner jacket and go to the opera, I’m a different person. I buy things differently. I eat different food. I think differently, right? And that’s a universal human tendency. I mean, it is part the problem with COVID, is I’m doing conference calls early in the morning in pajamas. I really need to stop getting out of this pajama-Lycra-bath-pajama cycle that my life has got into at the moment.

Forrest: So in specific to the one practice that was the ritual of three groups coming together, is there some way we could learn more, like can you give me a reference to how, here is that…

Dave: We’re going to publish that, but we ran it experimentally physically, and now we’re running it virtually. You get your three experts together, we’ll call them “Eagles,” because we first did this in British Columbia, so I picked up some imagery from the Haida.

Session one, Eagle One presents, Eagle Two and Three respond. Then the whole group breaks into threes and they go away and discuss what has been said, and one of them is designated Raven. Then the Ravens sit in a circle and discuss, and the Eagles can only listen. Then you repeat three times, rotating. So over a day and a half, you’ve not only had experts interaction, but you’ve had people discussing the interaction, and nobody can dominate the group.

And then say, if we got seven raven groups of three people each, then we actually recombine them, so we have three groups of seven to do the synthesis. So it’s an orchestrated dance in which nobody can dominate the roles. And that came down from the Kakadu work.

Now we’re actually putting that out with the EU as a **design** technique, so that, faced with conflict between epidemiology, behavioral science, and politicians, this is a way of ritualizing, in a very short period, that debate. But again, it’s based on this key concept that conflict is key for human sensemaking. And anybody who tries to remove conflict is making a fundamental error. The issue is to make sure the conflict is progressive and not personally destructive.

Forrest: Thank you for that.

Dave: The safeguard in there is quite important.

Forrest: Yeah. I’ve been looking at judicial process, in particular, for similar reasons.

So you take, “Twelve good men and true,” to take the classic phrase, all right? Make them four groups of three, and don’t allow them to talk with each other. They will make better decisions.

Lou: Yeah, this is super interesting. We have a question from Ted. Ted, would you like to ask your great question?

Ted: Dave, just given that we’re in a, well, the common understanding of evolution is when… about competition. Whereas it seems to me that when you look deeply at the underlying mathematics and systemics of evolution, all new levels of complexity arise from new levels of cooperation. So when you hold that view of the evolution of complexity, and then you look at how we have evolved our systems of value, and that we have **exchange** values, which necessarily value abundance of anything universal at zero, we seem to be in a really deep problem space.

Phoebe: I would only jump in to disagree that it’s all based on cooperation. It’s definitely, in ecology and in biology, it’s both. Both dynamics are very important for evolution.

… Mary Midgley’s devastating criticism of Dawkins, in a book called “Science and Poetry.” Mary Midgley is one of the doyennes of British philosophy.

Dawkins rewrote the introduction to “Selfish Gene” to try and cope with her criticism of it. He said he was misinterpreting evolution to give a biological justification for Thatcherism, which he was. I mean, I don’t know a single geneticist who takes Dawkins seriously. But the trouble is, the public **opinion** of genetics is informed by that. So completely (sp?).

We’re doing work at the moment in south of England where we got young women going for voluntary mastectomies, because they’ve had a genetic scan which says they got the gene, which disposes them to breast cancer. Now, the reality is, if you change their diet, that gene will never get activated. And they’re doing something very risky, that people have got into this linear, deterministic concept.

I would say, if you really wanted summarize evolution, it’s survival of the luckiest, not survival of the fittest, if you want to get it into simplistic phrase. And exaptation has been far more important than adaptation, i.e, things connect in novel ways in different circumstances. You get punctuated equilibrium in the process, and radical change. So I **do** think we need a much bigger understanding of evolution in the population as a whole. Yeah? And God help me…

Matt: How do we get that?

Dave: Well, just say … problem … chief knowledge officers in US government departments are young earth creationists. Just think about that.

Phoebe: I would also add that I think evolution, evolutionary theory, has been applied at the level of the individual, and so actually applying it at the level of the symbiosis, instead of it being cooperation or competition, applying competition but at different levels of, clusters of individuals or symbiotic assemblages as well, you get a very different picture of evolution.

Dave: Because every symbiont starts off as a parasite.

Phoebe: Totally, and it’s a…

Dave: And it’s really important. The transition from parasite to symbiont has human metaphors that we can draw.

Phoebe: And it’s also adding the time axis, that there are relationships that at times parasitical, and at times mutualistic, and at times symbiotic. So, I think it’s just there’s so much there to actually learn from, instead of the black and white, linear understanding of evolution, of survival of the fittest agents, singular individual agents. Yeah, that’s totally inaccurate.

Dave: And you can also trace it… There’s a classic divide in philosophy between social atomism and communitarianism. And this is fundamental. So social atomism dominates in northern Europe and North America, because it actually goes with the rise of Protestantism, and it assumes the individual is the primary unit. So, societies and aggregation of individual interests. You change the individual to change society. The individual has the relationship with God.

You contrast that with communitarianism, which is Africa, Asia, the Celtic fringe of Europe, southern Europe, where the individual’s identity comes as a **result** of their community. So the community is first, and the interactions of that. Now, I think the biology backs up communitarianism over atomism, and atomism has produced effectively a perverted result, because it focuses on the individual. And that’s never going to work for a species.

Phoebe: Yeah, I agree. And you’ve got something…

Ted: I think both are essential. If you have one without the other the systems fail. They both have to be in balance.

Dave: One of the things we’re just going to have to face up to the fact to, Ted, is, we’re going to have a significant culling of humanity, if we survive at all. We’re past the point where…

Ted: Why?

Dave: Because there’s no way of preventing it anymore. The population growth, the time available… I mean, the issue is we might… I don’t think we have an extinction event, but we will have a significant death rate. COVID itself is going to kill a lot more people than people currently realize. And there’s more coming on that. So we got to try and find a way of minimizing that and coming out of it differently. But it’s going to happen.

Ted: Only if people force it. We have alternatives.

Dave: You can mitigate it, but you can’t prevent it.

Ted: You can prevent it, with appropriate tech.

Phoebe: Maybe we could…

Ted: That’s deeply complex.

Dave: We can give ourselves breathing space, all right. If we actually invested in bloody well refreezing the poles, which is an engineering problem, that would give us 10 or 15 years to think. But is anybody listening to that? The point is nobody’s listening to that because nobody’s looking at **contingent** solutions. They’re all talking about the **final** solution. And what we desperately need at the moment is a contingent solution, which gives us breathing space.

Ted: Yeah.

Phoebe: I’m wondering if maybe we could finish with a question on the sensemaking/cooperation topic to kind of get us back into that space. I’m curious.

Lou: Is there a way that sensemaking, and a path, that would help us get through this massive extinction event, or to mitigate its effects?

Dave: I think that’s threefold. I think it’s about **very** high levels of citizen engagement on a distributed way, because that’s the only way we’ll change the attitudes, so people are prepared to accept change.

I think the other way is exaptation. We **desperately** need a **highly** structured worldwide process to actually exapt technologies fast for novel purpose. And that needs to happen on a micro as well as a macro level.

And I think the third thing is, and this is the most difficult, is how do we fight populism? Because I think we got… you know, the U. K. is in the same position as the U. S. at the moment. It’s being deeply manipulated. The democratic process of control is now being completely ignored by our government. They’re just assuming it will go away and people won’t care enough. So I think the final problem is, how do we get enough people to **care,** [so] that populism won’t win? And I haven’t got an answer to that.

Phoebe: I think I would add… I agree with everything you said, Dave. I would also add that we need new grand narratives. And we need these narratives that can get people feeling like they have a role to play within the future. And I think children and the younger generations are very important for that.

I also think… some of the work I’ve been doing is developing these rigorous imagination practices that allow people to expand perception of time. So, being able to perceive, and have an embodied empathy of future generations, and more than human species as well. So bringing in imaginative practice into governance and decision making, I think is also part of that, on the kind of granular local level. And then we’ve already touched upon these larger infrastructures of sensemaking and governance. Those would be my answers.

Lou: Well, awesome. Thank you to you two. That was a fascinating, fascinating conversation. We went into many places. I hope we’ve managed… Those are things, I think the work we do at Foresight very much contributes in a direction that was pointed out by both of you. Both from creating this decentralized community of contributors, making it so that people care. And I encourage you all to join us for our next Salon, where we are going to review the **whole** work that we have done during those past, those three months, where we were analyzing daily the COVID crisis, the challenges and opportunities arising from it. We’re going to review the whole thing, next week.

Thank you so much, Phoebe and Dave, for joining. Thank you Forrest, for jumping in also, it was a pleasure to have you. And I hope we all get to chat another time again. Please do join our Salons again, and thank you so much.